

Drought Monitoring Report, Dry Creek, Simpson Park and Grass Valley Allotments

Renewable staff for the Mount Lewis Field Office (MLFO) has been performing drought monitoring throughout the Dry Creek, Grass Valley and Simpson Park Allotments. Drought monitoring has been conducted to verify and document drought impacts on the resources throughout these allotments. Drought Monitoring was conducted in July and August by MLFO staff at Key Management Areas (KMAs) and crucial riparian areas within these allotments. Monitoring methodologies and focus used by the MLFO staff are consistent with those described in the Battle Mountain District Drought Detection and Monitoring Plan analyzed in the Battle Mountain District Drought Management EA (DOI-BLM-NV-B000-2012-0005-EA) dated June 14, 2012.

Drought monitoring performed by MLFO staff found that drought conditions have caused reduced vegetative growth and reduced water availability within these allotments. MLFO staff determined that reduced vegetative growth was present by the reduced leaf growth, seed head development and induced senescence found across these allotments. Water sources in the upper elevations of these allotments are limited to springs and riparian areas. Concentrations of unauthorized livestock around crucial riparian areas have led to utilization levels within these allotments that exceed Drought Response Triggers (DRTs) analyzed in the BMD Drought EA (see enclosed Drought Monitoring Map).

The higher elevations of Dry Creek, Grass Valley and Simpson Park Allotments do not have fenced boundaries, and is referred to as the Bates Mountain Area (BMA) by the MLFO. The Lincoln Seeding Pasture (LSP) is found in the lower elevations of the Dry Creek Allotment. Field observations indicate the vegetation in the lower elevations of these allotments have been severely impacted by drought, the lack of moisture has inhibited vegetative growth and its ability to recover after being utilized. The LSP experienced heavy utilization on key vegetative species by cattle during the 2013 grazing season. The BMA received heavy utilization on riparian vegetative species by cattle in the 2012 and 2013 grazing seasons. Heavy utilization by cattle coupled with two consecutive years of drought, appears to have impacted the health and production of vegetation across the LSP and BMA.

The vegetation characteristics of the BMA is ideal for Greater Sage-Grouse habitat and mapped as Preliminary Priority Habitat (PPH). The variety and abundance of sagebrush species provide year round opportunities of shelter and foraging for the Greater Sage-Grouse. The most important component of the the BMA is the abundance of wet meadows and riparian areas. These meadows and riparian areas provide abundant vegetation which supports the insects that are critical for the Greater Sage-Grouse young.

Dry Creek Allotment

The LSP has been in the extreme drought category according to the U.S Drought Monitor as of 9/17/2013. The LSP was visited by the MLFO on 7/2/2013 to conduct drought and utilization level monitoring. Drought monitoring confirmed the presence of extreme drought conditions and utilization monitoring revealed that use by livestock had exceeded DRTs on key forage species crested wheatgrass. Extreme drought conditions have reduced the availability and growth of the crested wheatgrass. The crested wheatgrass reached an average height of 4-6 inches and had reduced leaf growth and seed head development. The average utilization on the crested wheatgrass was 22% at the KMA, with many of the plants being more heavily impacted as shown in figures 4 and 5. Reduced growth on winterfat due to drought occurred during the 2013 grazing season, though not a dominant species across the pasture. The winterfat present within the LSP was heavily utilized as shown in figures 6-9.



Figure 1: Crested wheat grass plant within the Dry Creek Allotment showing reduced leaf growth, reduced seed head development and induced senescence.



Figure 2: LSP, KMA, DC-02 showing the lack of understory.



Figure 3: Absence of current years vegetative growth due to drought conditions in the LSP.



Figure 4: Utilization of crested wheat grass plant in the LSP.



Figure 5: Utilization on a crested wheat grass plant in LSP.



Figure 6: Showing stunted growth of an ungrazed winterfat plant in LSP.



Figure 7: Showing a grazed winterfat plant in LSP.



Figure 8: Fence line contrast of grazed (Background) and ungrazed (Foreground) winterfat in LSP.

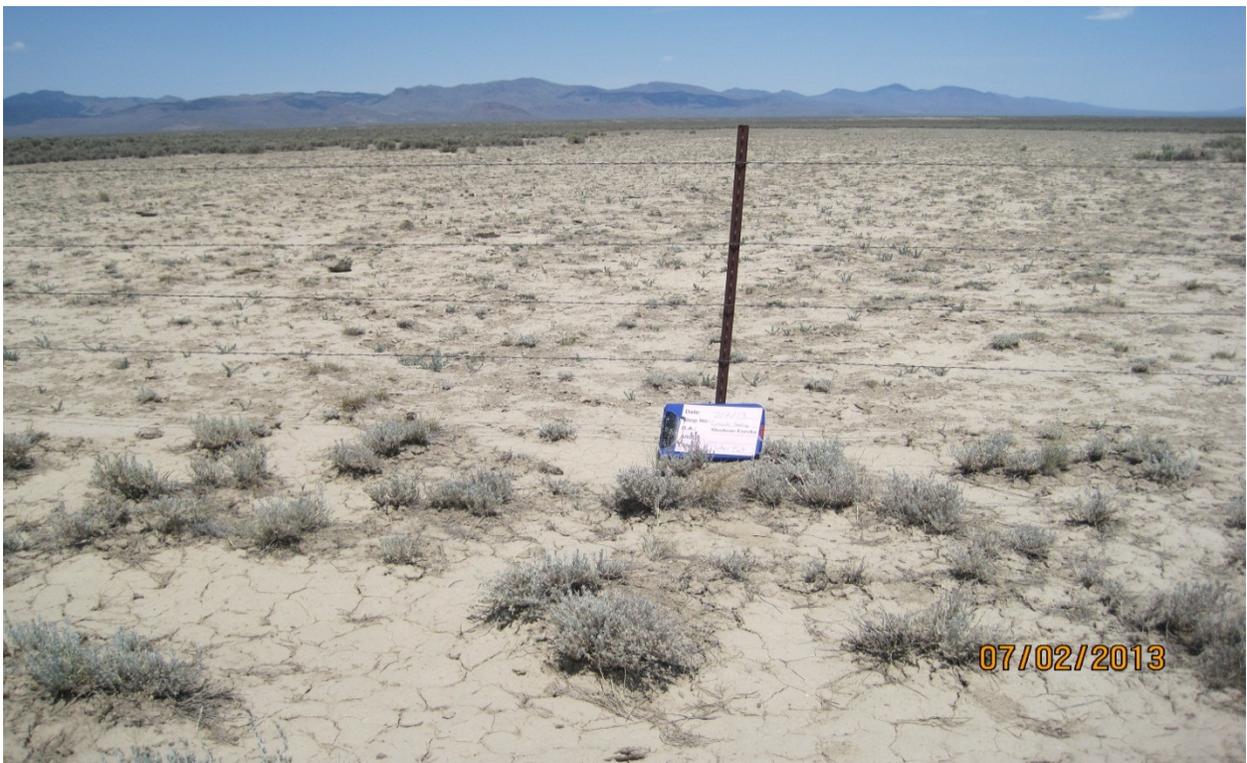


Figure 9: Close up of photo 7 with the fence line contrast of ungrazed (Foreground) and grazed (Background) winterfat in LSP.

BMA Riparian Monitoring

The BMA is currently in the extreme drought category according to the U.S. Drought Monitor as of 9/17/2013. BMA was visited by MLFO on 8/15/2013 to assess the condition of riparian areas. Riparian plants exhibited poor vigor and livestock grazing exceeded the stubble height DRTs at all four sites that were visited (see Table 1). Disturbance to riparian soils was present at all four sites visited on 8/15/2013, trampling, soil erosion, hummocking, and soil compaction.

Table 1:

Site	Lake	Upper Water Canyon	Lower Water Canyon	Spring by lake
Species	<i>Carex nebrascensis</i>	<i>Carex nebrascensis</i>	<i>Carex nebrascensis</i>	<i>Carex nebrascensis</i>
Average Stubble (in)	2.58	2.95	3.05	3.24



Figure 10: Unauthorized livestock concentration in a riparian meadow within the BMA.



Figure 11: Unauthorized livestock and utilization levels within the BMA.



Figure 12: Unauthorized branded livestock identified within the BMA.



Figure 13: Shows the contrast between grazed and ungrazed plants.



Figure 14: Cage showing ungrazed grasses that appear to be drought stricken.



Figure 15: Meadow within the BMA showing heavy utilization by cattle.



Figure 16: Close up picture of Figure 15, showing stubble heights of less than 3 inches.



Figure 17: Micro enclosure in a meadow within the BMA showing the effects of drought.



Figure 18: Meadow within the BMA showing signs of drought and heavy utilization.



Figure 19: Meadow within the BMA with standing water and un-vegetated stream banks.



Figure 20: Same meadow as Figure 21 showing trampling of stream channel.



Figure 21: Example of a stubble height measurement taken within the BMA.



Figure 22: Picture of a trampling and heavy utilization in a man-made lake within the BMA.



Figure 23: Unstable stream bank and trampling within the BMA.



Figure 24: Altered stream bank within BMA.



Figure 25: Example of the limited water in the springs and reduced riparian extent.



Figure 26: Drought stricken meadow within the BMA showing hummocking.



Figure 27: Spring within the BMA



Figure 28: Same spring as Figure 28 showing Hummocking and utilization.



Figure 29: Showing a drought stricken meadow within the BMA.



Figure 30: Additional photo of drought stricken meadow shown in Figure 29.



Figure 31: Showing the short stubble heights and effects of drought within BMA.



Figure 32: Vegetation in a meadow within the BMA, displaying signs of drought.



Figure 33: Meadow in Water Canyon within the BMA.



Figure 34: Vegetation displaying drought stress in Water Canyon within the BMA.



Figure 35: Shows the condition of the vegetation found in Water Canyon within the BMA.



Figure 36: Additional photos of vegetation in Water Canyon within the BMA.



Figure 37: Root growth of bunchgrass plants that were kept clipped at certain levels simulating heavy, moderate, light and no utilization. This represents the impacts of overgrazing on plant health. These impacts are known to accelerate when overuse occurs during drought.

Conclusion:

The combination of drought conditions and heavy livestock grazing in the BMA and LSP has resulted in DRTs being exceeded during the 2013 grazing season. Riparian vegetation such as *Carex* and *Juncus* within the BMA showed significant drought stress, as indicated by stunted plant growth, induced senescence, and reduced riparian extent. Continued use by livestock during the drought will further degrade the resources within these areas. The riparian areas within the BMA are crucial to the overall health and productivity of the resources and are vital to Greater Sage-Grouse and other wildlife that resides there. Nevada Department of Wildlife telemetry data shows that Greater Sage-Grouse from lower elevations leks on the east and west of the BMA use riparian areas and uplands within the BMA, making it critical summer habitat.